



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10 053,296	01-17-2002	Michael Rosenstein	6296.CPL/LB/PJS	5071

7590 06-26-2003

Patent Counsel  
Applied Materials, Inc.  
Legal Affairs Department  
P.O. Box 450A  
Santa Clara, CA 95052

EXAMINER

MOORE, KARLA A

ART UNIT	PAPER NUMBER
----------	--------------

1763

DATE MAILED: 06/26/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/053,296

Applicant(s)

ROSENSTEIN ET AL.

Examiner

Karla Moore

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,11 and 12 is/are rejected.
- 7) ☐ Claim(s) 4,7-10 and 13-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

Art Unit: 1763

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S.

Patent No. 5,731,678 to Zila et al.

3. Zila et al. disclose a semiconductor processing chamber comprising: a chamber body having sidewalls and a bottom (column 6, rows 19-21) defining an interior volume; a lid assembly (Figure 4, 406) coupled to the chamber body (using the below hinge assembly) and movable between a first position enclosing the interior volume and a second position; a hinge assembly (Figure 4, multiple part numbers, 405 & 407) coupled between the lid assembly and the chamber body; and a motor (Figure 13, 428; column 7, rows 33-36 and Figure 14, 452; column 9, rows 25-33) coupled to the hinge assembly for moving the lid assembly between at least the first position and the second position.

4. With respect to claim 2, the hinge assembly further comprises one or more mounting brackets (407) coupled to the lid assembly; a shaft (Figures 9 and 13, 429, 430 and 432) mounted to the mounting brackets; one or more bearing mounts (Figures 9 and 13, 424 and 441) rotatably coupled to the shaft.

5. With respect to claim 3, the motor is coupled to the shaft (Figure 13, 428; column 7, rows 33-36 and Figure 14, 452; column 9, rows 25-33).

6. With respect to claim 5, the bearing mounts are coupled to the chamber body via operator base (405) of the hinge assembly.

Art Unit: 1763

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,731,678 to Zila et al. as applied to claims 1-3 and 5 above, and further in view of U.S. Patent No. 6,469,448 to Taguchi et al. and U.S. Patent No. 6,042,707 to Moleshi et al.

9. Zila et al. disclose the invention substantially as claimed and as described above.

10. However, Zila et al. fail to teach a target of material for physical vapor deposition coupled to the bottom of the lid.

11 Taguchi et al. disclose mounting a target to a chamber lid for the purpose of carrying out a sputtering reaction, with the wafer mounted opposite on a wafer holder (column 1, rows 34-43).

12. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a target on a mounted to a chamber lid with the wafer disposed opposite in order to carry out a sputtering process as taught by Taguchi et al.

13 The prior art discloses the invention substantially as claimed and as described above.

14 However, the prior art fails to teach the lid comprising a magnetron.

15 Moleshi et al. teach the use of a magnetron during sputtering operations for the purpose of providing electrical energy and regulating erosion of the target during sputtering operations (column 5, rows 23-25).

16 It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a magnetron in the prior art in order to provide electrical energy and regulate erosion of the target during sputtering operations as taught by Moleshi et al.

17. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,731,678 to Zila et al. in view of U.S. Patent No. 6,469,448 to Taguchi et al.

18. Zila disclose the apparatus substantially as claimed and comprising: a chamber body having sidewalls and a bottom (column 6, rows 19-21) defining an interior volume; a lid assembly (Figure 4, 406) coupled to the chamber body (using the below hinge assembly) and movable between a first position enclosing the interior volume and a second position; a hinge assembly (Figure 4, multiple part numbers, 405 & 407) coupled between the lid assembly and the chamber body; a first mounting bracket coupled to the lid assembly (407); a shaft (Figures 9 and 13, 429, 430 and 432) coupled to the first mounting bracket; one or more bearing mounts rotatably coupled to the shaft; and a motor (Figure 13, 428; column 7, rows 33-36 and Figure 14, 452; column 9, rows 25-33) coupled to the hinge assembly for moving the lid assembly between at least the first position and the second position.

19. However, Zila et al. fail to teach a target of material for physical vapor deposition coupled to the bottom of the lid.

20. Taguchi et al. disclose mounting a target to a chamber lid for the purpose of carrying out a sputtering reaction, with the wafer mounted opposite on a wafer holder (column 1, rows 34-43).

21. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a target on a mounted to a chamber lid with the wafer disposed opposite in order to carry out a sputtering process as taught by Taguchi et al.

22. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zila et al. and Taguchi et al. as applied to claim 11 above, and further in view of U.S. Patent No. 6,198,299 to Hollman and U.S. Patent No. 4,416,102 to Peters.

23. The prior art discloses the invention substantially as claimed and as described above.

24. However, the prior art fails to a first bushing having a c-shaped cross section disposed in the chamber body and a first pin disposed between the lid assembly and the chamber body wherein a portion of the first pin mates in the first bushing.

Art Unit: 1763

25. Hollman teach the use of appropriately placed pins and bushings for the purpose of aligning a chamber with a cover (column 5, rows 9-14).

26. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided appropriately placed pins and bushings in the prior art in order to properly align the chamber with the lid as taught by Hollman.

27. The prior art discloses the invention substantially as claimed and as described above.

28. However, the prior art fails to teach the bushing having a c-shaped cross section.

29. Peters teach the use of a bushing with a c-shaped cross section for the purpose of allowing expansion of the bushing and subsequent locking of bushing in a proper placement (column 7, rows 13-20).

30. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a c-shaped bushing in the prior art in order to allow for expansion of the bushing and subsequent locking of the bushing as taught by Peters.

#### ***Allowable Subject Matter***

31. Claims 4, 7-10, 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

32. The following is a statement of reasons for the indication of allowable subject matter: The closest piece of prior art is Zila et al. However, Zila et al. fail to teach the apparatus comprising 1) the shaft coplanar with the upper surface of the body; 2) a plurality of first and second locating devices, wherein the first locating devices are disposed proximate a shaft of the hinge assembly and the second locating devices are disposed outward of the first locating devices relative to the shaft; or 3) a second mounting bracket coupled to the lid and the shaft with a brace between the first and second mounting brackets. Nor does any other prior art provide motivation for combining with Zila et al. to provide the structures above.

33. Claim 16 is allowed.



Art Unit: 1763

34. The following is an examiner's statement of reasons for allowance: The closest piece of prior art is Zila et al. However, Zila et al. fail to teach the apparatus comprising: a plurality of first and second locating devices, wherein the first locating devices are disposed proximate a shaft of the hinge assembly and the second locating devices are disposed outward of the first locating devices relative to the shaft. Nor does any other prior art provide motivation for combining with Zila et al. to provide the structures above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### **Conclusion**

35. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 703.305.3142. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703.308.1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9310 for regular communications and 703.872.9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661.

km  
June 22, 2003

*Dr. Gregory Mills  
703.308.1633  
Art Unit 1763*